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ABSTRACT

Much research has investigated the processes by which individuals gain information about themselves through comparison with others. The simultaneous influence of different sources of social comparison referents and the level of relative performance on subjects' (N=60) allocation of rewards and satisfaction was examined. Male undergraduates, working in pairs, predicted their scores on a speech about solutions to current problems, made the speeches, and then received predetermined feedback on their own score, their partner's score (live referent) and a mean score of all subjects (symbolic referent). Subjects indicated their satisfaction with their scores and allocated rewards to themselves and their partners. Controlling for feedback, results on allocation indicated significant main effects for performance relative to the live referent and relative to the symbolic norm. Subjects gave themselves more points when they performed better than their partner than when they performed worse than their partner, suggesting a straightforward self-evaluation effect. Subjects allocated more points to themselves when they performed worse than the norm than when they performed better than the norm, suggesting a self-enhancement effect. Although the social comparison process was operative, satisfaction was influenced principally by subjects' absolute performance scores. The findings suggest that different sources of social comparison and self-regulatory mechanisms play an influential role in individuals' lives. (NRB)

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The Effect of Social Comparison Processes On Self-Evaluative Reactions

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This report is based on a doctoral dissertation submitted by the author to Stanford University, 1981, and conducted under the supervision of Ewart A.C. Thomas. Thanks are due dissertation committee members Albert Bandura, Albert Hastorf, and Joanne Martin. The present author is currently a member of the Department of Psychology, University of Oklahoma, Norman, Oklahoma, 73019.

We often find ourselves uncertain about various aspects of our lives and, therefore, seek information that is necessary for effective functioning of everyday life. The range and complexity of choices faced by individuals in modern society require that we rely heavily on the experiences of others in evaluating the feasibility of personal goals and standards. Considerable amounts of research have been directed at the processes by which individuals gain information about themselves through comparison with others beginning most notably with Leon Festinger's theory of social comparison processes (1954a). Festinger's basic postulate is that people have a drive to evaluate their own opinions and abilities. They first attempt such self-evaluations through objective, nonsocial means, but in the absence of such means, people search for "social reality," that is, they evaluate themselves through comparisons with other people's opinions or abilities.

Much of the research generated by this theory has focused on aspects of social comparison such as choice of comparison referent and the influence of the norm (see Suls & Miller, 1977, for a comprehensive review of social comparison processes). Both of these aspects are the focus of the present investigation. Since it is generally agreed upon that people have a drive to evaluate their own opinions and abilities and often do so by means of social comparison, it is reasonable to assume that the more information they are provided when making social comparisons, the better enabled they are to judge the adequacy of their own performance. Knowledge of one's own performance relative to another in the immediate situation and relative to a group norm would provide such information and might differentially influence subsequent behavior.

Various amounts of research have explored social comparison with

another referent or with a group norm, but few have looked at the influence of both. For example, the emphasis in some social comparison research studying the choice of referent has been exploring the extent to which subjects seek to discover a range of scores and use such knowledge to estimate average performance as a measure of choice of referent (e.g., Brickman & Berman, 1971). In another area of research, equity theorists have been concerned with the relative influence of different types of equity comparisons such as local versus referential comparisons, but have generally explored each type separately and have only made presumptions about which is more influential in equity behavior (which is the state of equal inputs or contributions leading to equal outcome). Local comparisons refer to those made by individuals with another in the immediate environment, both of whom are linked to an ongoing relationship with one another (cf., Adams, 1965; Walster, Berscheid, & Walster, 1973). Referential comparisons refer to those in which the referent usually consists of a group or average comparison and is removed from the situation (cf., Zelditch, Anderson, Berger, & Cohen, 1955). Finally, the influence of the group norm has been studied further by social comparison and performance expectation states theorists, but typically in the study of group consensus or conformity (e.g., Asch, 1952; Crutchfield, 1955). In such studies, influence of the norm has been viewed in the sense of influence or "power" to change an individual's opinion. Interest in the present study lies in the conceptualization of the norm as an available source of social information against which people can guage and, thereby, evaluate the adequacy of their own behavior.

The present experiment explored the influence of different sources of social comparison on self-evaluative reactions. Specifically, we

systematically explored how both live and symbolic sources of comparison (cf., Bandura, 1977) simultaneously might affect individuals' behavior. We explored how knowledge of both another individual's and a group's average performance motivates subsequent behavior. In a 2 X 2 design, we investigated the influence of source of comparison referent (live vs. symbolic) and the level of current relative performance (better vs. worse) on subjects' a) allocation of rewards, and b) satisfaction.

Sixty Stanford male undergraduates served as subjects and were run in pairs. Subjects' task involved independently making a speech about solutions to a problem of current interest (for example, the Iranian crisis). Before presenting their solution, subjects stated the score they expected to receive (1-20 points). After both subjects had responded separately, they were provided with three pieces of predetermined feedback: their own score (O), the other subject's score (O', live referent), and a score that was said to be the mean performance of all males from the same psychology class tested on the task (N, symbolic norm). After a subject received feedback, he was asked, first, to state how satisfied he was with his own score (1: completely dissatisfied - 10; completely satisfied), and secondly, to allocate rewards between himself and the other subject.

In this study, variation in subjects' relative feedback scores was generated by varying the absolute scores. Therefore, to some extent, relative and absolute scores were confounded. To assess the effects of relative score, with respect to the norm and the other's score, we therefore used a 2-way analysis of covariance, with absolute feedback as the covariate. Controlling for feedback, results on allocation indicated marginally significant main effects for performance relative to the live referent ($F(1,55)=3.78$, $p<.06$) and relative to the symbolic norm ($F(1,55)=$

3.76, $p<.06$) (see Table 1). Subjects allocated more points to themselves when they performed better than the live referent than when they performed worse than the live referent, suggesting a straightforward self-evaluation reaction. However, subjects allocated more points to themselves when they performed worse than the norm than when they performed better than the norm, suggesting a self-enhancement effect (cf., Hakmiller, 1966). Subjects seemed to overcompensate themselves when they performed worse than the norm by allocating more points to themselves. These findings suggest a genuine effect of social comparison with both the live referent and symbolic norm. No interaction effect was found, $F<1$.

Results on satisfaction indicated no main effects for either referent when feedback was controlled ($F<1$ & 1.48 respectively, n.s.). Findings on satisfaction can be attributed to subjects' feedback; the correlational analyses reported below were used to separate the effects of feedback and relative performance (see Table 2). There was no significant interaction effect, $F<1$.

A second analysis which shows the effect of relative outcome scores on allocation is a between-subjects analysis. Conceivably this is a more powerful analysis because it treats the difference (O-O') between subjects' score, O, and that of the live referent, O', as a continuous variable rather than dichotomizing it as in the between-groups analysis. The correlation between subjects' score, O, and that of the live referent, O', was .64 ($p<.001$). Scores were set to ensure that the subjects' scores and the referents' scores fell within the same range (high, medium, and low) and this is the reason for the significantly large correlation.

Allocation: The correlation between a subject's allocation and the difference in feedback scores, O-O', was .49, $p<.001$, whereas the corre-

lation between subjects' allocation and their own score was insignificant (r=.17) and between subjects' allocation and the live referent's score was only -.25, p<.025. The correlation between subjects' allocation was 0-0', partialling out 0 was .53. These data indicate that allocation is not determined by absolute feedback per se, certainly not one's own, but by the comparative difference in scores between the subject and the live referent. No significant correlation was found between subjects' allocation and the symbolic norm's score (r=.09), nor between allocation and the difference between subjects' score and the norm (r=.07).

Allocation was also found to correlate with subjects' knowledge of the task (r=.29, p<.025) and expectancy score (r=.34, p<.005). The correlation between allocation and knowledge of the task, partialling out 0-0' drops to an insignificant level (r=-.13). Likewise the correlation between allocation and expectancy score drops to -.12 when 0-0' is partialled out. These correlations indicate that the correlation between allocation and expectancy is due to allocation's dependence on 0-0'.

Satisfaction: Results indicated that satisfaction correlated positively with subjects' own score, 0, (r=.56, p<.001), with the referent's score, 0', (r=.30, p<.01), with the difference between subjects' score and the live referent's score, 0-0', (r=.29, p<.025), and with the difference between their score and the symbolic norm's score, 0-N, (r=.49, p<.001). It is to be recalled that 0 and 0' correlate .64 which could explain the positive correlation between satisfaction and the other person's score. Partialling out the effect of the difference between the subject's own score and the live referent's score, one's own score alone still significantly influences one's satisfaction (r=.51, p<.001). Likewise, one's score alone still influences one's satisfaction

when the difference between one's score and that of the norm is partialled out (r=.32, p<.01). However, when subjects' own score is partialled out from the correlation between satisfaction and the difference in scores, O-O', the correlation drops to .09, n.s. These data indicate further that satisfaction is largely a function of one's own score.

Satisfaction also correlated significantly with the difference between subjects' expected and actual scores, O-E, (r=.23, p<.05). Subjects were more satisfied when they performed better than they expected than when they performed as they expected. This correlation explains a negative correlation between satisfaction and expectancy (r=.-32, p<.05). The less (more) subjects expected the more (less) satisfied they were with what they received. The more extreme their expectancies were, the more likely there was to be a difference between actual and expected scores; hence, the positive correlation between the difference in actual and expected scores. The finding on the difference in scores is consistent with findings by Ilgen (1970) that satisfaction is influenced monotonically by the difference between expected and actual performance. The correlation between satisfaction and subjects' own score, partialling out O-E, was .36, p<.005, indicating again that satisfaction is largely a function of one's own score.

Regarding the influences of the difference between subjects' score and that of the live other (O-O') and the difference between their score and that of the symbolic norm (O-N) as social influences and the direct influences of own score (O) as self-regulatory, then we can make the following tentative interpretations. Social comparison can certainly be seen to be effective in allocation when the referent is live. Between-groups analyses further indicate that social comparison can be seen to

be effective when the referent is both live and symbolic. In satisfaction judgements, both sources of comparison are seen to be operative.

Looking at the relative influence of social versus self-regulatory processes, with allocation, when one partials out only the effect of the live referent, there still remains a large residual effect. However, when one partials out the difference in scores between subjects and the live referent, there is very little residual effect. This suggests that social comparison mechanisms are affecting allocation in the form of differences in scores and not just the other person's score alone. With satisfaction, when one partials out the differences in scores in both kinds of comparison (O-O'; O-N), there still remains a large residual effect. Partialling out subjects' own score (O), however, from the correlation between satisfaction and the difference in scores (O-O') reduces the correlation to an insignificant level. This suggests that mostly self-regulatory mechanisms are affecting satisfaction in this study. The above findings are consistent with the social learning perspective (Bandura, 1977) that different sources of social comparison mechanisms and self-regulatory mechanisms play an influential role in people's lives.

Table 1: Mean Feedback Scores of O, Norm, and O'; and Subjects' Mean Allocation and Satisfaction Corrected for Covariance with Feedback (Study 1)

		SYMBOLIC: Better	SYMBOLIC: Worse
LIVE	Better	$\bar{O}$ = 16.4 $\bar{N}$ = 9.9 $\bar{O}'$ = 13.1 Mean Alloc. = 51.6 Mean Satis. = 6.6 n=15	$\bar{O}$ = 10.7 $\bar{N}$ = 14.4 $\bar{O}$ = 7.5 Mean Alloc. = 57.4 Mean Satis. = 6.1 n=15
	Worse	$\bar{O}$ = 13.3 $\bar{N}$ = 9.9 $\bar{O}'$ = 16.4 Mean Alloc. = 42.6 Mean Satis. = 6.4 n=15	$\bar{O}$ = 7.5 $\bar{N}$ = 14.4 $\bar{O}'$ = 10.7 Mean Alloc. = 52.9 Mean Satis. = 5.5 n=15

Analysis of Covariance; Covariate = Ss Feedback Score

Satisfaction: Live Referent - $F<1$
Symbolic Referent - $F = 1.48$ n.s.

Allocation: Live Referent - $F(1,55) = 3.78$, $p<.06$
Symbolic Norm - $F(1,55) = 3.76$, $p<.06$

Table 2: Intercorrelations for Variables on Trial 1 (Study 1)

	FEEDBACK					Knowledge of task	Expectancy Score	Future Expectancy Score	Actual Expected Score	Satisfaction	Allocation	Deservingness
	O	Norm (N)	O'	(O-O')	(O-N)							
Feedback O	--		.64e	.42e	.75				.54e	.56e	.17	
Feedback Norm		--			-.71e		-.21a	-.24b	.23a			
Feedback O'			--	-.42e	.50e				.31c	.30c	-.25b	
Feedback (O-O')				--	.31c				.25b	.29b	.49e	
Feedback (O-N)					--			.26b	.23a	.49e		
Knowledge of Task						--	.85e	.50e	-.26b	-.32c	.29b	
Expectancy Score							--	.56e	-.35d		.34d	
Future Expect. Score								--			.37e	
Actual-expected Score									--	.23		
Satisfaction										--		
Allocation											--	
Deservingness												--
Mean Scores	11.93	12.17	11.93	.07	-.23	6.20	11.2	6.05	1.77	6.15	51.17	5.68
Standard Deviation	4.28	3.92	4.28	3.62	6.02	1.52	3.27	1.35	5.48	2.05	11.80	1.21

N = 60; a = $p<.05$; b = $p<.025$; c = $p<.01$; d = $p<.005$; e = $p<.001$

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